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PATENT COOPERATION TREATY

PCT/EP2003/008794



PCT

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

510,311

Translation

Applicant's or agent's file reference 2002P20142WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/008794	International filing date (day/month/year) 07 August 2003 (07.08.2003)	Priority date (day/month/year) 12 September 2002 (12.09.2002)
International Patent Classification (IPC) or national classification and IPC G06F 11/16		
Applicant SIEMENS AKTIENGESELLSCHAFT		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 21 November 2003 (21.11.2003)	Date of completion of this report 11 June 2004 (11.06.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/008794

I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☒ the description:
 pages _____ 1-16 _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the claims:
 pages _____ 1-8 _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the drawings:
 pages _____ 1/2-2/2 _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 03/08794

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-8	YES
	Claims		NO
Inventive step (IS)	Claims	1-8	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-8	YES
	Claims		NO

2. Citations and explanations

1. Reference is made to the following document:

D1: EP-A-0 104 490 (KRUPP GMBH) 4 April 1984 (1984-04-04)

2. PCT Article 33

a. Claim 1

Field: Event synchronisation in error-tolerant systems with redundant processor devices.

Prior art: D1, which is considered the closest prior art, discloses a method for synchronising external events which are supplied to and influence a module (the method in general: page 3, line 24 - page 6, line 2), the module being provided for the parallel processing of a first number of instructions (each redundant system processes a certain number of instructions in parallel) according to which the external events are intermediately stored (implicit from page 4, line 29 - page 5, line 11), the stored external events being retrieved in a separate operating mode of the module for processing via at

least one execution unit of the module (page 5, lines 14-21), the module entering into this operating mode after a set second number of instructions has been processed (page 5, lines 1-14, page 9, lines 5-13), and a counter detecting the number of instructions carried out by the execution unit since the last time the separate operating mode was exited (implicit from page 9, lines 8-13).

Characterising features: D1 does not disclose that the module is shifted into the individual command execution mode as a function of the counter content.

The subject matter of claim 1 is therefore novel (PCT Article 33(2)).

Technical effect: The problem addressed by the present invention can therefore be considered that of being able to present external events at identical locations in the command execution of redundant CPUs even when the redundant CPU cannot be securely stopped at an identical location in the sequence of commands.

Inventive step: The solution proposed to this problem is neither disclosed nor suggested by the available prior art. An inventive step (PCT Article 33(3)) can therefore be acknowledged.

b. Claims 6 and 7:

Independent claims 6 and 8 contain all the features of claim 1. They therefore likewise meet the novelty and inventive step requirements of PCT Article 33(2) and (3).

c. Other claims:

Claims 2-5 and 8 are dependent on claim 1 or claim 7 and therefore likewise meet the PCT novelty and inventive step requirements.

3. Comments:

The present application contains more than one independent claim in the same category, i.e. three independent device claims. This contravenes the requirements of PCT Article 6 according to which claims must be clear and concise.